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DEPARTMENT OF
ENVIRONMENTAL QUALITY

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June 15, 2012

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Subject: EPA Comment Letter Dated May 25, 2012, Regarding Revised Risk Screening and Assessment Report, Prior Demolition and Construction Housing Area, Mountain Home Air Force Base, May 2012, Redline Version

Dear Ms. Hale:

The Department of Environmental Quality (DEQ) received your comment letter on May 25, 2012, regarding the Revised Risk Screening and Assessment Report, Prior Demolition and Construction Housing Area, Mountain Home Air Force Base, May 2012, Redline Version. DEQ responses to EPA comments are provided herein, and are numbered the same as the EPA comment.

1. Pesticide Sampling.
    a. MHAFB used incremental sampling, an improved type of composite sampling to estimate the mean concentration of a decision unit (see Section 1.4 of the Interstate Technology Regulatory Council's (ITRC) Incremental Sampling Methodology (ISM) Technical and Regulatory Guidance document dated February 2012). ITRC ISM Guidance states "In theory, all of the UCL methods that are applied to discrete sampling results can also be applied to ISM" (see Section 4.2.2). In addition, Section 1.3 of the ProUCL Version 4.1 User Guide states "When using a single sample hypothesis testing approach, site data can be obtained by collecting all discrete or all composite samples." Each housing area decision unit (DU) was subdivided into sampling units (SUs). Each SU had 30 incremental samples pooled into the incremental sample for the SU. Each SU was randomly selected in accordance with the approved work plan. The approach has been to use the incremental sampling data in conjunction with a simple hypothesis test on the means to assess each DU. In this instance, ProUCL can compute the 95% UCL using the standard normality or

lognormality assumptions, or using the Chebyshev method (a non-parametric approach). Therefore, the use of ProUCL was acceptable to DEQ.

b. Housing unit DUs were divided into SUs. The SU is equivalent to an exposure area (1/4 acre area). The sampling conducted at MHAFB used a variation on the incremental sampling methodology described in the ITRC's ISM Guidance document. The ITRC ISM Guidance states "Three or more ISM samples are needed to calculate a 95% UCL." (Section 4.2.2). In the typical DU context, however, three ISM samples are considered replicates. In the context of multiple SUs within a larger DU, as in the case at MHAFB, the ISM data from each SU can be combined to calculate a 95% UCL for the DU. Section 7.2.3 of the ITRC ISM Guidance states the disadvantage of dividing the DU into SUs "is that the UCL often exceeds the true mean by a larger degree than if replicates had been collected across the entire DU."

   MHAFB also collected one replicate (duplicate) pooled incremental sample from one SU within each DU (see Tables 2-3, 4-1, 4-2, 4-3, 4-4 and Appendix D). The relative percent difference (RPD) indicates some heterogeneity and potential error (i.e., sampling error, laboratory preparation error, and analytical error) within Oasis (DU-7), Phases 4 and 5e (DU-9) and Woodland Groves (DU-10). The RPD data for Presidential Acres (DU-8), Phases 4 and 5e (DU-9) and Woodland Groves (DU-10) indicate the within-SU variance is relatively small. The RPD for Oasis (DU-7) indicates a greater degree of heterogeneity and potential error.

c. The coefficient of variation (relative standard deviation) values for DU-7 (Oasis) identified in Table 5-1 are greater than 35%, indicating high variability in the data. However, the reported low mean concentrations (e.g., 1547 ug/kg for chlordane yielding a 95% UCL of 3990 ug/kg and a potential cancer risk value (PCRV) of 0.81) are below the action level (a PCRV of 10 at a 1E-5 site specific risk level). In addition, the pesticide sampling conducted by MHAFB in November 2008 and reported in January 2009, for Phases 4 and 5w (which includes the Oasis housing area) indicate low risk to pesticide exposure in soil. Although there is high variability in the data, there is confidence that the mean data is below the action level. Therefore, DEQ will accept the no-further-action conclusion for DU-7.

   The coefficient of variation values for DU-8 (Presidential Acres) identified in Table 5-3 are greater than 35%, indicating high variability (in statistical terms) in the data. Quantitative decision logic behind the decision to collect six samples was provided in the DEQ-approved Work Plan for Phase 1-7 sampling as well as the contingency plan for subsequent collection efforts. MHAFB data satisfactorily achieved the level of data precision prescribed in the approved Work Plan. The reported low mean concentrations (e.g., 32.5 ug/kg for chlordane yielding a 95% UCL of 43 ug/kg and a PCRV of 0.01) are well below the action levels (a PCRV of 10 at a 1E-5 site specific risk level), allowing decisions to be made on the data. Therefore, although there is

high variability in the data, there is confidence that the mean data is below the action level. Therefore, DEQ will accept the no-further-action conclusion for DU-8.

The coefficient of variation values for DU-9 (Phases 4 and 5e) identified in Table 5-5 are greater than 35%, indicating high variability (in statistical terms) in the data. Quantitative decision logic behind the decision to collect six samples was provided in the DEQ-approved Work Plan for Phase 1-7 sampling as well as the contingency plan for subsequent collection efforts. MHAFB data satisfactorily achieved the level of data precision prescribed in the approved Work Plan. The reported low mean concentrations (e.g., 87.4 ug/kg for chlordane yielding a 95% UCL of 126 ug/kg and PCRV of 0.03, and 7.2 ug/kg for dieldrin yielding a 95% UCL of 7.2 ug/kg and PCRV of 0.08) are well below the action levels (PCRV of 10 at a 1E-5 site specific risk level), allowing decisions to be made on the data. Therefore, although there is high variability in the data, there is confidence that the mean data is below the action level. Therefore, DEQ will accept the no-further-action conclusion for DU-9.

The coefficient of variation values for DU-10 (Woodland Groves) identified in Table 5-10 are greater than 35%, indicating high variability in the data. The data from the additional sampling conducted by MHAFB at Woodland Groves continue to indicate variability. The calculated 95% UCL without incorporating non-detects is 538 ug/kg for dieldrin and is 650 ug/kg incorporating non-detects. Both of the calculated 95% UCL are equivalent to a risk level of less than 1×10^{-5} (i.e., PCRV less than 10). Further evaluation of the Woodland Groves data is presented in the following bullets:

- The point of using a 95% UCL or 99% UCL is to calculate a representative concentration that provides a conservative estimate of the *average* exposure. For Woodland Groves, the calculated 99% UCL is large, requiring default to the maximum detected concentration for the UCL determination, which is an indication of high uncertainty about the average level of contaminants. Using the 99% UCL is one way to deal with the uncertainty.

- The Chebyshev 99% UCL is 1311 ug/kg for dieldrin, when including non-detects. This is equivalent to a risk level of 1.46E-5. When the 99% UCL for chlordane is added, the total risk level is 1.49E-5. This is an acceptable level of risk for a DU using a 99% UCL. The approved work plan indicates use of the 95% UCL.

- The 940 ug/kg maximum detected dieldrin concentration (SU10-PI6, see Table 4-4) yields a PCRV of 10.4, which is equivalent to a risk of 1.04E-5 (i.e., 10.4 times 1×10^{-6}). When the dieldrin risk and chlordane risk (a PCRV of 0.22, see Table 5-11) are added for Woodland Groves, a total risk of 1.062E-5 is calculated. Since risk is generally presented to one significant digit, this equates to 1E-5. This is an acceptable level of risk for an SU. Note

that the approved action level for an individual SU is at a site specific risk level of 1E-4; approximately an order of magnitude greater than the maximum detected concentration at SU10-PI6.

Therefore, based on the above analysis, DEQ will accept the no-further-action conclusion for DU-10.

2. Site 3 asbestos data. MHAFB provided information and data in an HDR memo dated February 26, 2012, which is included as Appendix H of the referenced report. The analytical laboratory noted "mostly even loading" on the sample collected with the entire end cap removed for the Site 4 activity based sampling (ABS) event. The laboratory note for the sample collected with only the inlet cap removed states "some uneven loading." The results for both samples were below detection limit for asbestos (< 0.004 fibers per cubic centimeter). The ABS event for Site 3 was conducted with only the inlet cap removed. The Site 3 sample data indicate asbestos below the detection limit. The laboratory noted mostly even loading with no blank areas or swirling patterns for the Site 3 samples with particulate loadings. Also, the laboratory noted that they would have rejected samples if there were uneven loading when analyzed under a microscope. The below detection values for asbestos at Site 3 and 4 coupled with the similar findings for the two Site 4 samples reduces the uncertainty regarding the Site 3 data. Therefore, DEQ will accept the no-further-action conclusion for all four ABS sites.

3. Asbestos follow-up activity

    a. Under the Asbestos Contingency Plan, MHAFB will conduct semiannual walkthroughs of the undeveloped or bare areas of the Presidential Acres and Oasis housing areas. The semiannual walkthroughs are necessary to determine where pieces of transite pipe continue to move to the ground surface, record and track those locations, and properly dispose of those transite pipe pieces.

    b. The frequency of walkthroughs is on a semiannual basis until there are three consecutive walkthroughs where no transite pieces are observed or until development occurs. DEQ is not aware of locations where pieces of transite have come to the ground surface in developed areas.

    c. The semiannual walkthroughs will be conducted as described in Section 6.5 of the approved Field Sampling Plan (Work Plan, Field Sampling Plan, Quality Assurance Project Plan, Version 2.2, Risk Screening and Assessment, Prior Demolition and Construction Housing Areas, June 2011).

    d. DEQ has encouraged MHAFB to conduct public outreach as part of risk management for both pesticides and asbestos. MHAFB has held public meetings providing

information to residents. The July 14, 2009, consent order does not include a requirement for MHAFB to conduct public outreach activities.

e. The last sentence of the first paragraph in the Asbestos Contingency Plan states, "ACM becomes RACM when it has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations regulated by 40 CFR Part 61, Subpart M." The sentence referred to in the EPA comment is for instances when broken asbestos transite pipe is encountered. This may occur as part of construction activity (e.g., utility repair excavation) or from observing pieces of broken transite on the ground surface. In the first instance, intact transite pipe may be encountered, which is not RACM.

DEQ appreciates EPA's effort in reviewing and commenting on documents submitted by MHAFB to DEQ under the July 14, 2009, consent order. If you have any questions, or you would like to discuss, please contact me at (208) 373-0296.

Sincerely,

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